

# State of University Research Governance in West and Central Africa

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## SYNTHESIS REPORT

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*Translation from French*

## **Acknowledgments**

I would like to thank the national consultants for their outstanding work serving as the basis for this synthesis report. Through them, I also express my deepest gratitude to the numerous key researchers with whom they met at the various designated universities. My hope is that their efforts will contribute to improving university research governance.

My sincere thanks also to the entire IDRC team for their immeasurable support.

## List of Acronyms and Abbreviations

AST	Applied Sciences and Technology
BMP	Bachelor – Master - PhD
CAMES	Conseil Africain et Malgache de l’Enseignement Supérieur (African and Malagasy Council on Higher Education)
CIEREA	Conférence des Institutions d’Enseignement et de Recherche Économiques en Afrique
CNES	Concertation Nationale sur l’Enseignement Supérieur
CODESRIA	Council for the Development of Social Science Research in Africa
CREPOS	Centre de recherches sur les politiques sociales (Centre for Social Policy Research)
ED	Ecole Doctorale (Doctoral School)
ED-EDEQUE	Ecole Doctorale Eau, Qualité et Usage de l’Eau (Doctoral School of Water, Water Quality and Water Use)
EM	Economics and Management
ERU	Education and Research Unit
FMPOS	Faculty of Medicine, Pharmacy and Odontostomatology
GDP	Gross domestic product
GNP	Gross national product
HDI	Human development index
ICT	Information and Communication Technology
IDRC	International Development Research Centre
IRD	Institut de Recherche pour le Développement (Institute of Research for Development)
ISRA	Institut Sénégalais de Recherches Agricoles (Senegal Institute for Agricultural Research)
LAC	Languages, Arts and Communication
LMD	Licence - Master - Doctorat
LSH	Lettres et Sciences Humaines (Humanities)
NEPAD	New Partnership for Africa’s Development
ONAS	Office National de l’Assainissement du Sénégal (Senegal National Sanitation Board)
PSJ	Political science and jurisprudence
PTCI	Programme de Troisième Cycle Interuniversitaire (Interuniversity PhD Programme in Economics)
REESAO	Réseau pour l’Excellence de l’Enseignement Supérieur en Afrique de l’Ouest (Network for Excellence in Higher Education in West Africa)
RSF	Research Support Fund
SC	Scientific Council
SDE	Sénégalaise des Eaux
TFP	Technical and financial partner
UAA	University of Abobo Adjamé
UB	University of Buea
UCAD	Université Cheikh Anta Diop
UG	University of Ghana, Legon
UGB	Université Gaston Berger
UNDP	United Nations Development Programme
UO	University of Ouagadougou

URG  
WARO

University Research Governance  
IDRC Regional Office for West and Central Africa

## Executive Summary

In light of the severity of issues affecting university research governance and the inadequacy of information compiled to date in this regard, the International Development Research Centre (IDRC) has launched a series of case studies focused on the state of university research governance at six (6) universities in West and Central Africa. A national consultant was mandated to collect data and draft a report concerning each case study. A consultant coordinating the study then drew up a summary report based on the reports from the individual universities.

The methodology followed for the case studies combined three different tools: i) a document review; ii) administration of a questionnaire to collect factual data and statistics; and iii) use of interview guides to document the perceptions and opinions of key actors in university research governance.

The university reports on the state of university research governance brought out a certain number of facts relating to the organisation, institutional direction and management of research.

With respect to research organisation, the following were noted:

- A lack of documented guidelines relating to university research organisation, with the exception of the University of Buea (UB), which has a „research management and policy guide’;
- The non-existence of accreditation criteria for research units except at the University of Abobo-Adjamé, which has a rudimentary accreditation system in place;
- The inadequacy of interaction between research units and the compartmentalisation of researchers, research units and research initiatives;
- A perceptible interest in the reorganisation and adoption of standards at several universities, which have already undertaken work in this regard (reforms within the last five years at UB, since 2008 at UO and ongoing at UGB).

The following issues were observed in the area of institutional steering of research:

- The absence of a national research policy or, if such a policy exists, its inconsistency with the institutional policy;
- The fairly limited influence of control structures for university research;
- A lack of government funding for research and the inadequacy and ineffectiveness of current funding mechanisms for university research;
- The absence of a culture of evaluation and non-existence of evaluation mechanisms for research units;

- The absence of a research agenda and inadequate consideration of social demand for research or, even where strategic plans exist, insufficient evidence corroborating their influence; moreover, the universities did not have mechanisms for determining research priorities.

With respect to management, the following were noted:

- Significant improvement in working conditions for researchers (UCAD, UGB);
- Concerns regarding some researchers' environment nonetheless (UB, UAA);
- Inadequate guidance of new researchers (for example, doctoral candidates);
- Lack of a policy on the use of research results.

The following major issues and challenges were documented:

- The need to improve the institutional framework at the national level to provide for clear policy on scientific research including strategic direction of research by government;
- The reorganisation of research centres and laboratories through implementation of transparent, consensual guidelines and subsequent staffing with competitive resources;
- Development of synergies amongst research teams;
- Issues arising from the ongoing LMD reform and the future of doctoral schools;
- The use of research results and ongoing dialogue with potential users of these results with a view to addressing social demand for research;
- Identification of long-term, institutionalised financing.

Promising approaches and other best practices identified relate to:

- Initiatives in the area of endogenous financing of university research;
- Efforts undertaken by university components towards greater openness to the public sector, the community and users;
- The dynamic nature of doctoral student associations and the alternative responses they have proposed to the numerous constraints facing new researchers;
- University cooperation at the African level approaching that was achieved by proponents of REESAO;
- The „research management and policy guide’ developed and implemented by the University of Buea as an effective tool for directing university research;

- Methodological training workshops similar to those organised by CREPOS to support new researchers.

Requirements in terms of capacity-building gleaned from the university reports on the state of URG are summarised as follows:

- Capacity-building of researchers in drafting research projects;
- Training in research project management (project structure, presentation, direction, evaluation, seeking funding, entering into contracts with outside collaborators, etc.);
- Researchers training in techniques in scientific English writing;
- Research team management;
- Training in mobilising financial resources to be competitive in responding to calls for tenders;
- Capacity-building in research administration.

The following recommendations have been formulated for governments, university authorities and technical and financial partners:

Governments are asked to:

- Define a national research policy with clear missions, well-developed strategies and coordination to create the necessary synergies amongst the various components of the national research system;
- Develop an institutional and organisational framework for research funding;
- Develop a functional system for grant funding and allocate substantial financial resources to promoting credible academic research.

University authorities should:

- Commit definitively to professionalising research administration;
- Develop a strategic plan for research and give consideration to social demand for research;
- Streamline the organisation and operation of research units;

Technical and financial partners are called upon to:

- Support governments to develop more effective research policies at the national level;
- Expand best practices in funding university research, for example, by allocating additional resources to support current endogenous funding initiatives;

- Provide financial, material and organisational support to academic cooperation structures such as REESAO;
- Build the capacities of the various research actors including parties responsible for institutional direction of research, research administrators, laboratory managers, teaching researchers and doctoral candidates.



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## 1. Introduction

Burdened with the challenges of poverty and marginalisation, Sub-Saharan Africa is vesting considerable hopes in the potential of higher education and university research to contribute significantly to the creation of human capital with the capacity to tackle issues affecting the continent's development. NEPAD and the African Union have undertaken initiatives targeting the revitalisation of African universities through support for the establishment of centres of excellence.<sup>1</sup> Similarly, numerous technical and financial partners (bilateral and multilateral) in African countries consider higher education and university research to be priority focuses at this time and are currently refining their intervention methods as a result.<sup>2</sup>

The renewed interest of development partners in higher education and university research creates a number of significant opportunities, given the key role that African universities could lay in transforming national and regional economies and their contributing subsequently to the advancement of the continent.

Currently, however, African universities post a lacklustre record characterised in most cases by an obvious lack of financial resources, inadequate infrastructures, overcrowded classrooms, nearly destitute research conditions and so on. The enormous challenges facing these universities call for initiatives targeting greater effectiveness of these public educational institutions.

Despite its significant potential to contribute to the economic and social development of African countries, university research remains relegated to a marginal role and suffers from many weaknesses, particularly in regards to effective direction, organisation and management. The absence of strategic research plans as well as the inadequacy of financial resources, quality research facilities in sufficient number, motivated researchers, dialogue with potential users of the results of research and appropriate mechanisms for utilising research results are amongst the factors inhibiting academic research.

In light of the severity of issues affecting university research governance and the inadequacy of accurate information documented and compiled in this regard, the International Development Research Centre (IDRC)<sup>3</sup> has launched an initiative to study possibilities and, where applicable, take future actions concerning university research governance. In this context, the IDRC's Regional Office for West and Central Africa (WARO) has recruited national consultants and a regional coordinator responsible for leading a review of the state of

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<sup>1</sup> The Panafrican University will be made up of five (5) institutes under the auspices of existing universities located in each of Africa's five geographic regions. The first campus will be opened in South Africa, tentatively in February 2010, and will specialise in space science; and a second campus, planned for North Africa and specialising in water science and energy, is scheduled to open its doors in September 2010. The three other campuses will specialise respectively in: i) the life and earth sciences; ii) the basic sciences (physics, chemistry, etc.) and engineering; and iii) governance and social science. These campuses, scheduled to open sometime after 2010, will be distributed amongst East Africa, Central Africa and West Africa.

<sup>2</sup> Matos, N. „The Partnership for Higher Education in Africa – Onto the Next Five Years’. *International Higher Education*, no. 44, summer 2006.

<sup>3</sup> The IDRC, a Canadian public institution, has been working since 1970 towards making research a true lever of development in developing countries. The IDRC supports a broad range of research institutions including universities.

university research governance (URG) in West and Central Africa. This review applies to six universities in five different countries (see Table 1).

**Table 1: Universities Selected for a Review of the State of URG**

University	City	Country
University of Abobo Adjamé	Abidjan	Côte d'Ivoire
University of Buea	Buea	Cameroon
Cheikh Anta Diop University	Dakar	Senegal
Gaston Berger University	Saint-Louis	Senegal
University of Ghana	Legon, Accra	Ghana
University of Ouagadougou	Ouagadougou	Burkina Faso

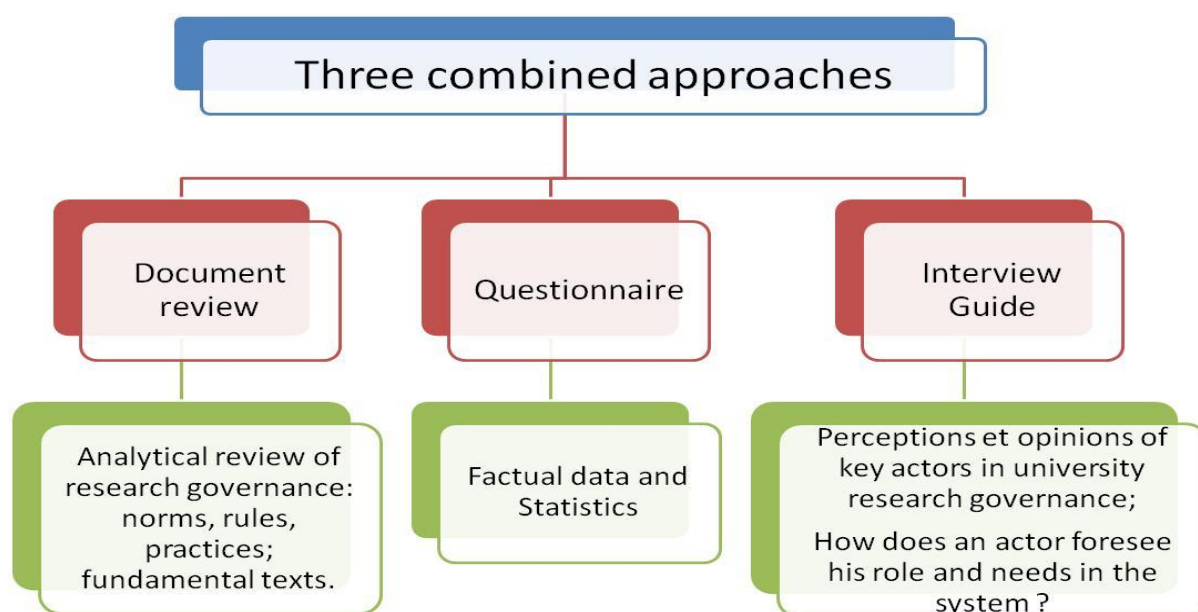
It was decided to assess university research governance in terms of three specific criteria: i) organisation of the research system; ii) institutional steering of the research system; and iii) management of structures, programmes/projects and resources.

The methodology was broken down into multiple steps:

- A review of the pertinent literature conducted by a consultant in parallel with development of the methodology;
- Development of the study methodology and tools for data collection by the regional coordinator with support from the programme manager from the IDRC;
- Conduct of surveys at the designated universities in the following manner (see Graph 1):
  - ☞ A review of the pertinent documentation (legislation and regulations, activity reports, studies, etc.) on the organisation, direction and management of the university research system;
  - ☞ Administration of a questionnaire to the head of research to collect factual and statistical data on university research governance (university profile, types of research, profile and status of teaching researchers, funding arrangements, etc.);
  - ☞ Conduct of interviews with key informants to document their perceptions and opinions concerning policies, methods and practices in university research governance (strengths and weaknesses, best practices, deficiencies, intervention priorities). These interviews targeted the individuals responsible for directing and administering research and for operational management of research as well as researchers and doctoral candidates.

☞ Next, the national consultant compiled the data, drafted an interim report and forwarded the preliminary results to a select committee at each university before submitting an amended document to the regional coordination consultant. The consultant's observations were then incorporated into the drafting of the final report.

- ☞ Drafting of a regional summary report on the state of URG based on the reports from the six case studies.



**Graph 1: Data Collection Tools at Each Designated University**

Source: State of URG methodological guide, 2009

This summary document has eight (8) sections. Section 2 following this introduction addresses the current context of university research governance with particular emphasis on the political, economic and social context in the countries where the designated universities are located, national research orientations and policies, etc.

Section 3 outlines the organisation of academic research with a focus on existing structures including their interrelationships and operation. The next section focuses on the institutional direction of university research. The control structures in this area are reviewed and their

operational approach examined (legitimacy, transparency, evaluation, etc.). Section 5 explores the operational management of university research by setting out the existing procedures and management tools including their operation and effectiveness. Researchers and the research environment are also discussed.

Section 6 highlights the major issues and challenges facing universities in research governance, indicates promising approaches that merit further support and identifies opportunities for capacity building. Before the conclusion, a penultimate section presents key recommendations for governments, technical and financial partners and university authorities.

## 2. Contextualisation of University Research Governance

### 2.1 Political, Economic and Social Context: Five Countries, Two Different Contexts

Based on economic and human development indicators (Table 2), the countries where the designated universities are located may be divided into two groups: Cameroon and Ghana in one and Senegal, Côte d'Ivoire and Burkina Faso in the other. The first two countries are classified as having medium human development<sup>4</sup>, whilst the other three (Senegal, Côte d'Ivoire and Burkina Faso) are amongst the countries with low human development. These three countries are also classified amongst the bottom 25 countries of the 177 countries ranked, with Burkina occupying 176th place.

Classification according to the human poverty index (HPI-1) also reveals significant differences between the two groups of countries. GDP per capita follows the same trends, with Cameroon and Ghana positioned above \$2250 (PPP USD) and the other countries below \$1800 (UNDP, 2008).

**Table 2: Demographic, Economic and Human Development Indicators**

Indicator / Country	Ghana	Cameroon	Senegal	Côte d'Ivoire	Burkina Faso
Human development index (HDI) - 2005	0.553	0.532	0.499	0.432	0.370
HDI ranking – 2005	135	144	156	166	176
Life expectancy at birth (years) - 2005	59.1	49.8	62.3	47.4	51.4
GDP per capita (PPP USD) - 2005	2480	2299	1792	1648	1213
GDP growth rate (1990-2005)	2	0.6	1.2	-0.5	1.3
Gini coefficient	40.8	44.6	41.3	44.6	39.5
Human poverty index (HPI-1) ranking	65	64	97	92	106
% of population living below monetary poverty line (USD \$1/day) 1990-2005	44.8	17.1	17	14.8	27.2
% of population living below monetary poverty line (USD \$2/day) 1990-2005	78.5	50.6	56.2	48.8	71.8
Annual population growth rate	2.6	2.7	2.8	3.5	2.8
% of population urbanised	47.8	54.6	41.6	45	18.3
% of population under age 15	39	41.8	42.2	41.7	46.2
Education spending as % of GDP	5.4	1.8	5.4	4.6	4.7
% of public education spending on higher education	18	24	24	20	9

Source: UNDP - Human Development Report 2007-2008

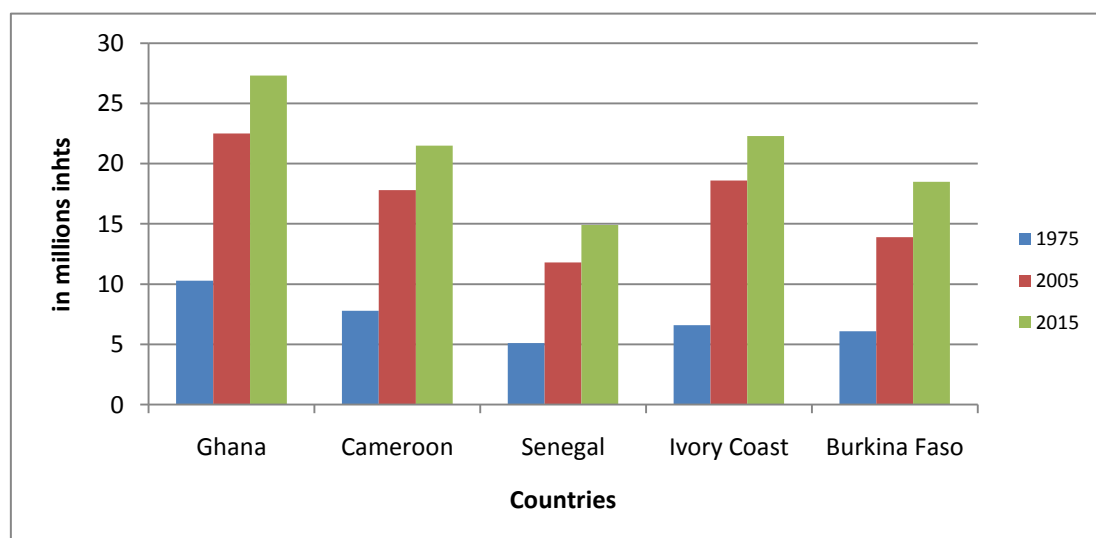
Poverty is a primary characteristic of all the countries, where more than half of the population lives below the monetary poverty line of \$2 a day. They also share similar inequality levels with Gini coefficients ranging between 39.5 and 44.6.

<sup>4</sup> According to a UNDP report (2008), countries are divided into three categories with respect to the HDI (2007-2008): (i) high human development: countries with an HDI between 0.800 and 1; (ii) medium human development: HDI between 0.500 and 0.799; and (iii) low human development: HDI between 0 and 0.499.

Demographic indicators are less definitive but nevertheless reflect the characteristics of developing countries with, notably (Table 2):

- Strong population growth (approximately 2.8%) with Côte d'Ivoire posting highest annual growth of 3.5% between 1975 and 2005 (Graph 2);
- A very young population, some 40% of the population being less than 15 years of age;
- The urbanised population generally remaining in the minority, between 42 and 55%, but continuing to grow, with the exception of Burkina Faso, whose population is only 18% urbanised.
- Life expectancy remaining low, ranging from 47 years in Côte d'Ivoire to 62 years in Senegal.

**Graph 2: Population Growth between 1975 and 2015**



Source: Data from the UNDP Human Development Report (2008)

Meanwhile, the countries in the sample group spend approximately 5% of their GDP on education, Cameroon being the notable exception at only 2%. Between 1/5 and 1/4 of this spending on public education are earmarked for higher education, except in Burkina where this rate is only 9%.

## **2.2 National Orientations and University Reforms, Changes in the 1990s**

Scientific research in all five countries studied has its origins in the colonial period. After independence, the new authorities established boards, commissions and delegations to build the foundations of existing research institutions. Nearly two decades on, the first departments responsible for scientific research were established<sup>5</sup>. At their side formed other ministries

<sup>5</sup> After Côte d'Ivoire (1971), ministries of scientific research emerged in most countries into the 1980s: Ghana (1979), Burkina (1983), Senegal (1983) and Cameroon (1984).

overseeing various research institutions (e.g., agriculture, health, higher education). Fast-paced changes in this oversight of scientific research combined with the institutional instability of the ministries responsible for this sector have not been conducive to consistent management of research at the national level.

Despite the existence of initiatives targeting the formulation of national research policies and priorities (general policy statement on scientific research in Côte d'Ivoire in 1994, strategic plans for scientific research in Burkina in 1995 and Senegal in 2006), university research governance appears to evolve peripherally to strategic priorities in situations where these policies exist. The case of Burkina Faso is symptomatic in this regard: unlike the majority of other African countries, Burkina Faso developed a fairly clear research strategy but was then unable to generate adequate resources for its implementation.

Major academic reforms took place during the 1990s. These institutional changes included:

- The university reform initiated in 1993 in Cameroon which led to the establishment of seven universities (including the University of Buea) and the creation of vice-presidential or deputy chancellor positions responsible for specific areas, such as Vice-President Research;
  - o This reform was continued and expanded in 2005 through reorganisation of the ministry responsible for higher education, which now has a division responsible for future planning, research and cooperation. Within this new division is a unit for promotion of university research.
- The reform undertaken in Côte d'Ivoire in 1995 through the establishment of three autonomous universities including Abobo Adjamé (taking the place of the national university) and the replacement of faculties by ERUs with the view to strengthening the research component, followed in 1997 by a national consensus on higher education; these changes were preceded by the restructuring of Ivorian research efforts during the period from 1980 to 1991;
- The National Consensus on Higher Education (CNES) from 1992 to 1993 in Senegal and adoption of a project to improve higher education (1996-2003) funded by the World Bank<sup>6</sup>.
- The restructuring of the University of Ouagadougou in 1991, including the establishment of faculties by grouping its various institutes and schools, and in 1995-1996 to create three campuses: Ouagadougou, Bobo-Dioulasso and Koudougou, which began operating independently in 1997.

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<sup>6</sup> The long-term objective of PAES was to establish a stronger system of higher education with increased cost-effectiveness, gender equity and relevance in terms of the economic and social development of Senegal. The project's specific objectives were to: a) improve library services; b) enhance teaching; c) expand research; d) develop a maintenance system; e) reinforce management and public and private financing in the domain; f) carry out the reorganisation of student services.



During the 1980s and 1990s, universities throughout the region were subjected to major reforms which had inevitable impact on both teaching and research. However, no clear strategic directions appear to have been formulated with the view to achieving effective management of university research. Even in cases where they do exist, research policies do not seem to be shared by teaching researchers in terms of both institutional direction and the organisation and management of university research.

### 2.3 Characteristics of the Selected Universities

In characterising the universities in our sample group, we might consider two categories of criteria:

- First, the relatively older universities (UCAD, UG, UO) might be grouped together in terms of age, university size (student body and faculty), number of research centres and laboratories, these institutions incidentally have by far the largest student bodies. They also tend to have more extensive laboratory facilities. At the other end are the remaining universities (UAA, UB, UGB), which were established more recently but have also developed fair-sized student bodies and faculties (Table 3).
- Second, the use of an additional category of criteria<sup>7</sup> results in a range of scenarios:
  - (i) *the scope of implementation of the Bachelor-Master-PhD reform and the existence of doctoral schools:* UCAD and UB have fully adopted the LMD reform and have doctoral programmes in place; the University of Ghana is evolving in the Anglo-Saxon system that operates on principles similar to those recommended by the Bachelor-Master-PhD
  - (ii) *the extent of access to computers and Internet connections:* UAA and UB have very limited access to computers and Internet connections;
  - (iii) *the type of ministerial oversight:* UAA and UO fall under a single ministry of higher education and scientific research.

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<sup>7</sup> See Table A1 in the appendices.

**Table 3: Characteristics of the Selected Universities**

University / Criterion	City	Country	Year Founded	Student Body	Faculty	Faculties /ERUs	Schools and Institutes	Centres and Labs
University of Abobo Adjamé	Abidjan	Côte d'Ivoire	1996	5000 in 2008	170	4 ERUs	1	14 labs, 1 centre
University of Buea	Buea	Cameroon	1992	11068 in 2007	288	5 faculties	1	9 labs, 4 experimental centres
Cheikh Anta Diop University	Dakar	Senegal	1959	60080 in 2008	1169	6 faculties	13	153
Gaston Berger University	Saint-Louis	Senegal	1990	5000 in 2008	133	4 ERUs	2	1 centre, 16 labs
University of Ghana	Legon	Ghana	1948	35000	628	16 faculties	15	19 centres, 15 labs
University of Ouagadougou	Ouagadougou	Burkina Faso	1974	29787 in 2009	460	7 ERUs	3	7 centres, 55 labs

Source: State of URG surveys, 2009

## Organisation of University Research System

***The universities studied are notable for their lack of documented guidelines relating to research organisation. The same applies to criteria for accreditation of research units which are virtually nonexistent.***

The universities selected for case study do have research teams/groups, laboratories and research centres. In general, these various research entities form the base of the pyramid under the supervision of ERUs or faculties. A research branch is responsible for operation and management of the research mechanism. A scientific committee is mandated in parallel to provide direction. With the exception of the universities in Senegal, the director of research reports to a vice-president of research and international cooperation.

The structures of existing research units are somewhat ambiguous. Moreover, there is generally no legislation governing the operation of research units with the notable exception of the University of Buea, whose *„Management and Research Policy Guide (2007-2012)‘* sets out the framework within which research is to take place.

The universities do not have criteria in place for accreditation of their research units except at UAA where sponsors have to apply in writing for recognition to the university council through the appropriate channels and with notice to various intermediary bodies (ERU, Scientific Council, etc.).

The creation of research units is frequently a personal initiative on the part of a researcher or research group. The lack of documentation leads to the proliferation of research units with individual teaching researchers aspiring to manage „their‘ structures.

***The inadequacy of interaction between research units appears to compromise development of university research and the resolution of issues to which it should contribute.***

The compartmentalisation of researchers, research units and research initiatives is criticised at all of the universities. This is illustrated in two examples:

- i) At UB the faculty of science is managing a major project on swine influenza funded by the U.S. Department of Defence, yet the medical school is not associated even though its involvement could have increased project effectiveness;
- ii) At UGB, two doctoral students (math and geography) working in the same field of study (fishing) discovered by accident at an event that their areas of specialisation overlapped somewhat without their knowledge, leaving them labouring to create or find data that was already available at GBU.

The lack of dialogue between research teams and inadequate pooling of resources are notable also at UO, where many researchers work alone, particularly in the PSJ, EM and LAC ERUs; teaching researchers remain largely unaware of the study topics of colleagues from other ERUs and occasionally within their own ERU.

The centres and laboratories operate in isolation, often without any tangible connection with the heads of the ERU, generating the image of „black boxes’ within ERUs. This situation is due mainly to the creation process within ERUs, where research activity takes place typically through personal initiative on the part of the teaching researchers.

Even at universities with coordinating committees and platforms for exchange such as UB, many research actors do not grasp the impact of these structures on university research governance.

### ***Universities need to embrace the emerging trend of standardisation amongst research units***

Universities appear to have become aware of the informal nature of existing research units, in most cases research groups, and the consequences of this. Interest in reorganisation appears to have developed in this regard judging by certain recent initiatives:

- i) The University of Buea launched a major reform five years ago including the introduction of guidelines for optimising research;
- ii) The University of Ouagadougou undertook similar reforms beginning in 2008;
- iii) Gaston Berger University is currently implementing a project with the objective of improving the laboratory environment and organising research activities more effectively.

Other universities need to embrace this trend with a view to developing documentation for organising and defining the hierarchy of their various research units. Development of criteria for accreditation of laboratories and research centres will contribute to optimising the existing research mechanism. To ensure long-term success, this mechanism must be supported by adequate funding and incentives.

## **Institutional Steering of University Research System**

### ***Control structures for research exist but have only limited influence***

Decision-making bodies for the research mechanism are in place in all the universities surveyed: university assembly or council, decision-making body, vice-president research, scientific council both centrally and, on occasion, within the individual ERUs, etc.

One of the main characteristics of all of these entities is their limited influence on research. Scientific councils meant to play a crucial role in driving research and providing technical support to the university assembly are struggling to do so, most frequently finding themselves relegated to routine or secondary tasks.

At UGB, UO and UAA, decision-making bodies such as scientific councils do not have control over research teams, laboratories or centres. The notable exception is UB, whose control structures have significant power. That institution's scientific council has been operational since 2008 and held two meetings to date to evaluate research proposals.

The various actors at the universities generally accept decisions taken by the control structures as legitimate based primarily on the fact that the leaders of these bodies are elected. The situation is more complex at UGB where some teaching researchers contest the method for appointing members to the scientific council on grounds that it is not always made up of the most active researchers.

Although it has been contended that decision-making mechanisms are transparent in all respects, some researchers at UB question the results announced by the committee for awarding research grants which they suspect are in favour of individuals close to members of the control structure at that institution.

### ***Financing mechanisms for university research need to be redesigned with government allocations provided more consistently but also more methodically***

The lack of financial resources for research is often cited to explain the limited influence of control structures on research teams and laboratories established by teaching researchers on their own. Most of the universities acknowledge that they have no dedicated budget for research. However, to conclude that research funding is non-existent is erroneous; it is instead the mechanisms for allocating financial resources to research that are deficient as the following examples illustrate:

- Governments allocate significant funds as research allowances and premiums which are incorporated directly into the salaries of teaching researchers without

making the beneficiaries accountable to provide any specific research results in return<sup>8</sup>;

- Research allowances at UCAD and UGB in Senegal are 150,000 CFA per semester or 300,000 CFA per year. Monthly research allowances are calculated as 105% of base salary;
- At UB research allowances ranged between 100,000 and 200,000 CFA per semester depending on grade, and the government recently granted a second, more substantial, research allowance in the range of 300,000 to 591,000 CFA per semester;
- At UO research allowances were increased in 2007 to their current level of 700,000 to 800,000 CFA per year, whilst they range between 400,000 and 600,000 CFA per semester at UAA.
- At UG, the teaching and research staff and research receives GHc 500 (\$ 333) annually as an allowance for research and documentation

Excluding direct payments to teaching researchers, a number of endogenous initiatives can be identified in research funding:

- UB allocates 4 to 6% of its budget to research, and the university officials plan to increase this rate to 15% over the coming years;
- The government of Ghana through the Ghana Education Trust Fund (GET Fund) allocates \$ 500,000 annually to the UG for the funding of research and conferences. The establishment of the Research Committee and Conferences in 2007 to assess research proposals and allocate the available resources competitively is a step in the right direction.
- The research fund at UAA is fed funds from the university's operating budget in the amount of 100 million CFA per year;
- UCAD's Research Support Fund (RSF)<sup>9</sup> is financed through the services structure in the amount of approximately 50 million CFA per year;

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<sup>8</sup> In reality, these allowances are frequently offered in response to salary demands. Governments establish new allowances as a roundabout solution rather than incorporating the associated amounts into the salary structure. As a result, the recipients view the increases not as contributing to covering their research expenses but rather as part of their basic livelihood.

<sup>9</sup> The RSF offers the option to finance research projects through both unsolicited submissions and calls for proposals. The Fund encourages multidisciplinary research and finances all types of research but also faces a serious lack of financial resources. For additional information, see the URG study report, UCAD case study, 2009, page 24.

- UGB and UCAD allocate significant funds to field study by teaching researchers, with UGB for example spending CFAF 90 million in 2007. Despite the significant size of these allocations, they are nonetheless inadequate to provide for proper living conditions for researchers. Another problem lies in quality control, with university authorities and governments making little effort to monitor the outputs of these field studies.
- Some ERUs at UGB award grants to laboratories and scientific journals. This decentralised financing is sometimes substantial; for example, ERUs dedicate one-fifth of their operating budgets to research.

However, the quantum of this funding remains woefully inadequate in light of the enormous demand for funds for research activities. This explains in part the influence of international funding on research agendas.

Those responsible for university research are unanimous in recognising that the nature of funding (public or private) has certain impact on research governance:

- Contractual requirements prescribe special procedures for managing these external funds;
- These funds have influence on the type of research conducted, the ownership of research outcomes and the approach to administering the credits awarded;
- Research priorities are determined by sponsors, with researchers pursuing only those projects initiated or proposed by the funding agencies;
- Universities or research units under contract comply with the requirements of their financial partners.

Governments need to rethink their involvement in assigning specific budgets to university research which should be separate from the operating budgets of faculties and schools. In addition to this funding, research budgets should be supplemented internally using a portion of revenues from production activities or services performed by Senegalese universities. These resources would drive research in the form of competitive, well-structured grants serving as effective incentives.

***It is important to foster a culture of evaluation and develop a mechanism for evaluating research units***

Evaluation of research is one area where universities need to institutionalise it. In fact, evaluation mechanisms are non-existent.

- The evaluation system of CAMES provides for assessment of teaching researchers for career development purposes. For many teacher-researchers, CAMES remains the only credible indicator of their performance. However, this system has certain objective limitations: once an instructor has reached the top level, CAMES no longer provides effective research incentives<sup>10</sup>.
- Generally speaking, research units have no internal evaluation mechanisms (teams, laboratories, research centres); similarly, universities do not have external evaluation systems in place for their research units. There are also no reliable mechanisms for sharing the knowledge generated and incorporating this knowledge into teaching curricula.
- However, some universities have established mechanisms for evaluating research projects on the basis of competitive funding existing within their system; for example, the evaluation committee for research projects at UB has taken on increasing responsibility in this area. At UG, it is the same Committee for Research and Conference that evaluates and approves research proposals seeking funding from the Research and Conferences Fund. A similar system is in place at UCAD for allocation of its Research Support Fund (RSF), although its scope is not broad due to the limited nature of funding.

***There are no research agendas or mechanisms for incorporating of social demand into research***

Strategic plans have been adopted at UB (2007-2015), UO (2005-2009) and UAA. A plan for UGB is currently under review while UCAD is presently developing a strategic plan for research. In general, and with the exception of UB, there is no evidence demonstrating the influence of existing strategic plans. Moreover, the universities have no mechanisms for setting research priorities. Here again, UB has set the pace by holding research planning days every two years.

In the absence of strategic direction for research by governments and internal mechanisms at universities for incorporating social demand for research, teacher-researchers have been carrying out their research, either individually or collectively, primarily to meet their own particular interests and secondly to meet the requirements of external partners. The external funding influences the planning and direction of university research particularly in terms of requirements for collaborative and multidisciplinary work.

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<sup>10</sup> It is necessary to reflect on the status of researchers at our universities. Instructors are governed based on their teaching roles, but their entire careers depend on the quality of their research results rather than on the quality of their teaching. This may explain why some individuals reaching a pinnacle of their teaching career tend to shift their focus to research.



Whilst the LMD reform has been adopted smoothly at UB and its implementation has begun at UCAD, the thinking process is still ongoing at UO and UAA. A pilot experiment is also underway at the LSH ERU at UGB. Although this reform is viewed by some as an opportunity to renew research mechanisms, it also raises many concerns. Many teacher-researchers cite the inadequacy of human and financial resources as serious set back to reform. They stress the risk of deviation amongst doctoral schools and the potential reluctance of some instructors to embrace the reforms fully.

## **Operational Management of University Research System**

### ***Procedures exist in this regard but do not take sufficient account of research***

All the universities studied have guides for administrative and accounting procedures that are followed relatively closely. It is to be noted, however, that these texts do not generally address research. In most cases, hiring procedures for teacher-researchers have been standardised. UAA has no official system in place for specific recruitment and it results in hiring decisions not aligned directly with educational or research needs.

Independent management of laboratories without common guidelines accepted by all weakens the system and can lead to all kinds of deviations. A teacher-researcher at UAA summed up the general feeling with respect to laboratories: „Everyone gets on; everyone manages himself, creating a kind of “management in non-management””.

### ***Working conditions for researchers have improved but remain a concern in some cases***

Teacher-researchers at universities in Senegal (UCAD, UGB) appear to be working in a more favourable environment (salary increases, individual computer access, broader Internet access, etc.) with particular improvements noted in the last several years although large equipment for basic research are often out of reach.

At UO, the physical and material infrastructure for research is characterised by lack of office space and computer especially for new researchers. Although they have access to information and communication technologies (computers, Internet), the Internet speed remains relatively low. Assistance has been provided to teacher-researchers to acquire laptop computers.

At the other universities, meanwhile, working conditions are in some cases below the expectation. At UAA, teacher-researchers report a „poor environment, underpaid researchers and inadequately equipped laboratories’, leading many researchers to opt to leave for Europe. Teacher-researchers at UB criticise their working environment as inadequate: many instructors have no office as well as Internet access, for which they have to go to the multimedia centre.

Challenging work environments were reported at all universities for new researchers, who are frequently left to fend for themselves with no resources including, in most cases, no office or laboratory space. Little importance is placed on mentorship in teaching and research work. They also generally receive no initial support.

Research at most universities (UCAD, UGB, UG, UO) is made more challenging by disproportionately high teaching loads and external demands (one-on-one consultations). The additional hours logged by some teacher-researchers exceed official guidelines for working time leaving them very little time to devote to their research. UAA, meanwhile, has a wealth of instructors and unequal distribution of class time to the point that some teacher-researchers complain of being marginalised.

Documented guidelines at UCAD and UB incorporate provisions to address issues relating to ethics and professional conduct. UAA, UG and UO, on the other hand, have no specific codes in place to explicitly govern these issues.

At UCAD, questions of ethics and professional conduct are addressed in a satisfactory manner. Its Research Ethics Committee (REC), made up of 15 individuals appointed for six-year terms, decides on the ethical validity of research programs submitted for its assessment and formulates opinions and recommendations on ethical challenges and societal issues arising from advances in knowledge in all fields of science. The ethics committee at UB, on the other hand, is not yet functional although the consultation process for appointing members is underway.

### ***The application of research results remains the Achilles heel of university research***

All the universities surveyed viewed inadequate use of research as one of their major weaknesses. Researchers at UCAD reported enormous difficulties in sharing and utilising their research results due to the lack of appropriate scientific and technical support or a suitable institutional environment. Mechanisms currently in place in this regard are not yet functional. The under listed issues remain to be implemented at UCAD:

- Creation of a business incubator based on or relating to research for purposes of commercial and technological development;
- Development of institutional guidelines governing the protection and application of research results;
- Establishment of a service responsible for intellectual property and the use of research results.

The UAA and UO have no structures or mechanisms in place for promoting the application of research. Instead, research results simply appear in scientific publications which are largely unutilised.

At UB, teacher-researchers reported that their research results also remain underutilised despite several persistent attempts to change this. Certain initiatives do exist for promoting knowledge transfer, particularly through partnerships with the private sector.

Universities also publish in refereed scientific journals recognised by CAMES (See Table 5)<sup>11</sup>. These journals play an important role in promoting teaching researchers in that they provide essential support for publication of research results. However, their scope is limited insofar as their format is not compatible with mass distribution to the general public.

Beyond scientific publications, the application of research results is a long and particularly complex process calling for serious reflection. It will be difficult for researchers to teach, carry out diligent research, consult occasionally and then promote the results of their research.

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<sup>11</sup> See appendices for list of publications. Many journals are published only irregularly, often due to financing issues, which reduces their impact as supports for dissemination. The credibility of some „in-house’ journals is also questioned based on the composition of their review committees.

Efforts need to be taken by universities, which can then designate experts to work alongside the researchers.

Universities are also major stakeholders in initiatives such as business incubation, however the private sector and civil society, etc., also need to play important roles in ensuring successful dissemination and adoption of research results. This is because these stakeholders played a role in the definition of research programmes and their prioritisation.

**Table 4: Number of Scientific Journals per University**

University	UAA	UB	UCAD	UG	UGB	UO
Number of scientific journals	01	03	11	05	06	05

Source: URG surveys, 2009

## **Issues, Requirements and Promising Approaches to Explore**

### **6.1 Major Issues and Challenges in Research Governance**

The primary issues and challenges arising from the interviews conducted at the various universities are as follows:

#### ***A need to improve the institutional framework at the national level***

The lack of a clear scientific policy at the national level to define research priorities, the involvement of multiple ministries in scientific research, a lack of synergy amongst these entities and the marginal coordinating role played by the ministry of scientific research all pose barriers to increased visibility of research in general and university research in particular.

Existence of huge potential at the universities in terms of human resources is another opportunity for growth. Along with improvements to the institutional framework, provision strategic steering of research by governments through the establishment of a sound, competitive and well managed funding mechanism would undoubtedly lead to qualitative changes at universities. Financial partners need to encourage governments to move in this direction.

#### ***Streamlining of research centres and laboratories***

The organisation of university research is a challenge to be tackled in a timely manner if universities are to effectively influence national development. The adoption of clear and transparent and clear guidelines, allocation of grants to efficient research units and establishment of competitive resources should help in reorganising the sector.

The individual initiatives behind the establishment of these laboratories are laudable but have reached their limits. Any significant progress requires profound changes likely to overcome the reluctance and even resistance from some proponents of the existing research units.

#### ***Development of synergies amongst research teams***

The compartmentalisation of research and researchers is a systemic issue that must be addressed if we are to increase the effectiveness of university research. Universities should develop mechanisms for incorporating competition into research systems by creating workspaces and forums for multidisciplinary or trans-disciplinary cooperation. It is also necessary to further foster a research culture at universities where education appears to predominate.

#### ***Issues arising from the ongoing LMD reform and the future of doctoral schools***

Many actors in research place great hopes in doctoral programs to resolve the issues identified in research governance. However, there are real fears that these doctoral schools are misguided.

The research management mechanisms put in place must convince researchers that a collective approach through the formation of functional, structured research teams will provide more opportunities than individual and private initiatives. Research needs to be re-evaluated in relation to teaching so that it provides greater return on investment (financial compensation, recognition from peers and authorities, etc.).

### ***The use of research results and ongoing dialogue with potential users***

Consideration of social demand for research is a major challenge that African universities need to face. To this end they must ensure that research priorities are defined in partnership with potential users by establishing mechanisms for dialogue and exchange. In addition, multiple approaches to disseminating research results need to be built downstream to reach as many research beneficiaries as possible.

### ***Increased financial resources for research: A major challenge***

The severe budgetary constraints frequently burdening countries in sub-Saharan Africa do not create an optimistic outlook for improved funding of research in general and university research in particular. In light of rapid growth in the number of students and a less rapid increase in university budgets, research is often the victim of negative budget decisions.

In this unfavourable context, university authorities have to cope with increasingly tight budgets and make deep cuts in the already limited funding granted for research. The example of UAA is significant in that its research budget was reduced from 100 million CFA to 12 million CFA between 2008 and 2009 due to budgetary constraints.

The government should be made aware of the importance of making research a priority by demonstrating the salutary role in university research governance which should be accompanied by appropriate support measures. At the same time, universities urgently need to build their capacity for capturing public or private competitive resources from both domestic and international sources.

## **6.2 Promising Practices and Strategies Requiring Support**

In the gloomy atmosphere of university research whose challenges tend to discourage even the most insightful players, innovative practices are emerging that can serve as the starting point for an initiative to support university research.

### ***Initiatives in endogenous financing***

Although the budget allocated for university research is inadequate, it reflects the determination to provide endogenous resources. Occasionally paltry, these initiatives reflect a determination to provide endogenous resources to support research. The Research Support Fund (RSF) with a budget of about CFA 50 million, launched by UCAD and funded through

internal generated resources is a sound initiative worth consideration by other universities. The initiative to allocate a portion of the resources generated by the UCAD Foundation to research activities is another welcome innovation that might be replicated.

The practice at UAA where about CFA 100 million is annually set aside from its operating budget towards a research budget is another good example and demonstrates the interest of university authorities to support research. Another good example is the action taken at UB, which allocates 4 to 6% of its budget to research and intends to eventually raise this proportion to 15%. The subsequent decision to establish a competitive fund for research and innovation provides a framework for sound management of resources for research.

The Research and Conference Fund at UG which has an annual allocation of the Ghanaian state in the amount of \$ 500,000 is an example to be amplified.

***The establishment of doctoral schools with a multidisciplinary and inter-faculty structure creates opportunities***

Doctoral schools are called upon to play a unifying role and to assist in aligning research disciplines and to promote interaction amongst new doctoral candidates. Though the doctoral schools are positive initiatives, the challenge has been mentoring students due to a lack of financial resources, poor logistics and the heavy workload on the faculty.

***Greater openness to the public sector, community and users***

Some departments of universities are taking steps towards greater openness to the public sector and the community of users. At UCAD, for example, the ED-EDEQUE doctoral school has representatives from SDE and ONAS on its scientific committee. Similarly, one of the chemistry laboratories has established pilot units for water desalination and fluoridation in the groundnut basin, thus promoting greater openness and solutions to problems at the grassroots level. Partnerships with selected ministries through the contribution to the design and implementation of national programmes are also to be noted (e.g., FMPOS and the Ministry of Health).

The national forum for scientific research and technological innovations in Burkina Faso, held every second year and currently at its eighth edition, is an excellent example of partnering to showcase the results of research.

The UB's organization of planning days provides another ideal example of involving the users of research results who also have the opportunity means to influence the direction of research activities during the conceptualisation process.

***The dynamic nature of doctoral student associations offers a response to the numerous constraints facing new researchers***

The involvement of doctoral student associations at UCAD in the organisation of sessions for new researchers in partnership with IRD is another worthwhile initiative to be replicated. The

same applies to a doctoral students' group from the LSH ERU at UGB which, in conjunction with CODESRIA, organises sessions for doctoral candidates focusing primarily on discussion about the students' research and other concerns.

### ***Academic cooperation across Africa deserves further exploration***

The Réseau pour l'Excellence de l'Enseignement Supérieur en Afrique de l'Ouest (REESAO), established in Togo nearly four years ago, brings together 15 francophone universities in West Africa representing some 4,000 teacher-researchers and more than 200,000 students. This network is founded on „the principle of ongoing collaboration to promote the development of synergies and commonalities amongst its members'. REESAO's objectives are ambitious and include: i) promoting a new type of inter-university cooperation; ii) modernising the educational programmes of universities; iii) facilitating mobility and employability; and iv) undertaking mutual management of the LMD reform.

The PTCI (Programme de Troisième Cycle Interuniversitaire) in economics initiated by the Conférence des Institutions d'Enseignement et de Recherche Économiques en Afrique (CIEREA) through its shared campuses and doctoral programme are important tools for research and African integration.

Lastly, two practices are to be encouraged and disseminated:

- Adoption of a research management and policy guide by UB is an effective step towards directing university research;
- The methodological training workshops organised by CREPOS to support doctoral students at UCAD and GBU serve as a model for other universities. As methodological approaches evolve in response to emerging issues, particularly multidisciplinary and interdisciplinary initiatives should be expanded to include other researchers.

## **6.3 Capacity-Building Requirements**

The following requirements have emerged in discussions with individuals involved in research governance:

- Teacher-researchers identified gaps in their capacity to plan „bankable', competitive research projects and then to manage them after obtaining funding;
- In the light of the financial constraints that universities face, many teacher- researchers stressed the importance of acquiring skills in mobilising financial resources in order to be competitive in responding to calls for tenders/proposals.



- For some teacher-researchers, it is imperative to improve scientific writing in English to gain access to international research funding granted on a competitive basis.
- The ability to build and manage research consortia is another essential skill in the context of interdisciplinary research involving multiple research institutions.
- Many teacher-researchers noted the need for effective planning of activities to disseminate research findings.
- A number of issues of interest to research administrators and directors were also documented as follows:
  - The urgency of implementing the LMD reform and the fears and concerns arising from the reform have generated calls for support in making this transition effective;
  - Some officials are not prepared to assume responsibility for research administration and direction.

The following requirements in terms of capacity-building may be required for teacher-researchers, heads of research units and research administrators and directors.

- For teacher-researchers:
  - Training in research project management (project structure, presentation, direction, evaluation, funding sourcing, entering into contracts with outside collaborators, etc.);
  - Capacity-building of researchers in drafting research projects;
  - Researcher training in writing techniques in scientific English
- For research team coordinators and laboratories:
  - Laboratory management;
  - Research team management;

- Leading research projects (project development, seeking funding, project execution, monitoring and evaluation)
  - Training in mobilising financial resources to be competitive in responding to calls for tenders;
  - Guidance in promoting research results
- For administrators and directors at the institutional level:
- Strategic management of the university: adoption of the LMD reform and alignment of structures;
  - Research administration: how research is administered at research institutions (study of practices at a reputed centre or university, pooling of experiences);
  - Formal training for research directors at the institutional level (training, sharing experiences, seeing what works).

## Recommendations

### 7.1 Governments

In the general framework of research policy, it is important to recognize that institutional policy of research institutions, including university research, is not connected to any national research policy. For this reason, there is an urgent need for a coherent policy at the institutional and national levels to:

- Define national research policy with clear missions, well-developed strategies and coordination to create the necessary synergies among the various components of the national research system;
- Develop a strategic research plan specifying research priorities, strategic objectives, the roles and responsibilities of the various research stakeholders at the national level indicating activities, intervention strategies, indicators for measuring the achievements; identifying partners, resources and action plans;
- Recognize the importance of university research and prioritize it as a critical institution of the national research and innovation systems;
- Develop a national mechanism to promote synergies between national research organisations, support the pooling of human and financial resources allocated to research and enabling collaboration amongst the various ministries involved in research policy (Ministries of Higher Education, Scientific Research, Health, Agriculture, etc.).

Research policies function optimally where funding is sustainable and institutionalised. Consequently, governments need to develop an institutional and organisational framework for research funding. The development of a functional system of grant funding (with a strategic role, incentives, regulation and control mechanism) and allocation of substantial financial resources are necessary if governments seek to advance the credibility of university research.

The following measures may specifically be considered:

- Put into practice the political will asserted by decision-makers by releasing adequate budgetary resources to influence the direction of research. Compliance with commitments made at the ministerial conference of NEPAD to allocate 1% of the GDP to scientific and technological research would be a first step.
- Develop a competitive national mechanism for funding and, at the same time, draw up the targets based on which research facilities would be evaluated. In light of the budgetary constraints of governments, it is important to secure external funding to supplement any funds created.
- Acknowledge the importance of research to national socioeconomic development and maintain the political will to equip the sector with the requisite human, material and financial resources. The development challenges facing the continent can be overcome using African expertise if adequate working conditions are established.
- Expand local initiatives for financing research.

## 7.2 University Authorities

The question that university authorities need to ask themselves is: „How can we create conditions to support high-quality research?’ One challenge in this regard is to develop and implement an efficient system of university research governance built on **professionalism in research leadership and administration**.

Additional measures which are also necessary include:

- Development of a strategic plan for research defining the mission, the university’s strategy, research priorities and methods for adopting these priorities, etc.;
- The requirement of accountability from the various stakeholders at the university (students, the government, funding sources, faculty, etc.) and the establishment of mechanisms to ensure success in this area;

- Streamlining of the organisation and operation of research unit through:
  - o Structuring laboratories, defining conditions and guidelines for their creation, operation and accommodating doctoral students;
  - o Systemising the evaluation of research laboratories and proposing a system of sanctions.
  
- Today many research actors perceive doctoral schools as one of the solutions to the problems affecting research governance. Given the strategic importance of these doctoral schools, it is important not to overlook the process of their establishment, particularly in terms of their direction.
  
- The current situation of universities has become a concern across the continent due to the unfavourable position generally reserved for the training of new researchers. It is therefore necessary to foster more favourable conditions for the development of these new researchers by expanding initiatives to organise research training workshops.
  
- Social demand for research is not generally taken into account by universities, which place greater emphasis on research for purposes of individual career development. It is essential that universities initiate a strategic planning process for research incorporating the concerns of companies (public and private), local communities, NGOs, various civil society organisations and the private sector in general.
  
- Development of a communication strategy in relation to decision-makers, economic operators and members of civil society organisations to raise awareness about research results and interest among these actors to playing a greater role in resource mobilization at the national level.
  
- Improving the environment for researchers by equipping teacher-researchers and research units with instructional materials, computer hardware and improved Internet access.

### **7.3 Technical and Financial Partners**

- The lack of a research policy and the limited nature of public resources allocated specifically to research activities constitute major obstacles to the expansion of

university research. Technical and financial partners need to leverage their positions to influence governments by:

- Advocating governments to develop more effective research policies at the national level; IDRC can support African universities in this way;
  - Proposing matching-grant mechanisms to mobilise more financial resources to benefit university research.
- TFPs also need to expand adoption of best practices in financing university research, for example, by allocating additional resources to support current endogenous funding initiatives.
  - Financial, material and organisational support for academic collaboration institutions such as REESAO could generate positive impact on a large scale considering the geographic influence of these types of structures and their credibility amongst member institutions.
  - The most significant expectations concerning TFPs, including IDRC, relate to the capacity-building component. Future efforts in the area of capacity-building may be broken down by three types of actors:
    - those responsible for research steering and administration through training and the sharing of experiences (research administration, resource mobilisation for research, etc.);
    - Managers of laboratories and other research units (administrative, financial and accounting management, drafting of funding proposals, etc.);
    - Teacher-researchers and doctoral students (continuing education in technical and managerial studies)
  - Improved logistical support for doctoral schools due to their strategic role in training new doctoral students (equipment, computers, well resourced libraries; scholarships, mobility grants);
  - Support for capacity-building initiatives amongst new researchers.

## Conclusions

In the light of the challenges of poverty and marginalisation and the growing importance of knowledge and expertise in today's world, Sub-Saharan Africa needs an effective university research system to offer appropriate responses to issues affecting African development.

Despite the commitments made in 2003 by African countries to allocate 1% of their GDP to research and innovation, the political will of governments has been lacking to achieve this target. Sub-Saharan Africa spends less than 0.3% of its GNP on scientific research, making the region the least in the world in terms of funding research.

This review of the state of university research governance has revealed numerous challenges facing those involved in research at the universities surveyed:

At the national level, there are:

- Lack of a national research policy setting out guidelines for the activities of various stakeholders in the research system;
- Weak institutional direction at the national level as well as weak linkages between universities and the ministries responsible for scientific research;
- Lack of an appropriate and effective system for financing research which has led to the inadequacy of budgetary resources allocated to research; a preponderance of external financing creating the fear that sponsors could direct research activities according to their own agendas.

At the universities, numerous deficiencies were observed in terms of research planning, direction and management:

- Research mechanisms are developing on an informal basis; in general there are no documented guidelines for organising research units (teams, laboratories, centres, etc.);
- Control structures are fulfilling their roles only to a limited extent;
- The absence of structures for evaluating research mechanisms, research units and researchers is a serious impediment to quality control.

However, the current situation has a number of positive aspects serving as a potential foundation for future success:

- Most universities authorities have demonstrated the willingness to embrace change, and promising initiatives have been undertaken towards greater support of university research;
- Despite the constraints on the research environment and the lack of an adequate framework, many researchers participating in multidisciplinary research teams and at the laboratories carry out work whose results are responding to social demand for research. These individuals are also ensuring at least minimum working conditions for doctoral candidates and sustaining the system by providing research training to new researchers.

Given the enormous potential at universities in terms of human capital, addressing the deficiencies observed in research governance could have multiplier effects exceeding all expectations.

The key role of governments cannot be overlooked, particularly in terms of the increase and streamlining funding for research. The internal reform of control structures to assist them to fulfil their roles more effectively should be a top priority. The professionalization of research administration and direction of research go along with the process of formalising research units in keeping with transparent and concrete guidelines. All research activities funded should also be subject to regular evaluation.

Technical and financial partners need to take part in sensitizing decision-makers concerning the need for a coherent policy on scientific research that defines priorities and develops an action strategy based primarily on regulating the system and providing adequate incentives to research actors to respond to social demand for research.

Capacity-building of the parties responsible for institutional direction, research administrators, research managers and teaching researchers is another area in which technical and financial support from sponsors is essential.

This combination of internal efforts, national dynamics and external support provides hope for revitalised university research with the capacity to address the challenges of African development.



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## Appendices

**Table A 1: Additional Characteristics of the Selected Universities**

University / Criterion	LMD Reform	Doctoral Schools	Ministry Responsible	Equipment Level
University of Abobo Adjamé	Not yet implemented but reflection process followed and documentation adopted	No doctoral schools	Ministry of Higher Education and Scientific Research	Inadequate: some computers and Internet connections but unreliable
University of Buea	Adopted		Ministry of Higher Education	Unsatisfactory: some instructors without offices; Internet access via multimedia room
Cheikh Anta Diop University	Adopted	7	Ministry of Higher Education, Universities and University Centres	Satisfactory: many professors have laptops + Internet access
Gaston Berger University	Pilot programme (LSH ERU)	No doctoral schools	Ministry of Higher Education, Universities and University Centres	Satisfactory: offices with Internet access
University of Ghana	Anglo-Saxon System	Anglo-Saxon System	Ministry of Education	Satisfactory; infrastructure improvement; Internet access to teachers, improved human capital
University of Ouagadougou	Adoption ongoing	No doctoral schools	Ministry of Secondary and Higher Education and Scientific Research	Somewhat satisfactory: offices equipped including Internet access but at low speed

**Table A 2: List of Scientific Journals by University**

University	Scientific Journals
University of Abobo Adjamé (UAA)	- <i>Sciences et Nature</i>
University of Buea	- <i>African Journal of Special Education</i> - <i>EPASAMOTTO</i> - <i>JASS</i>
Cheikh Anta Diop University (UCAD)	- <i>Journal des Sciences de l'Ingénieur</i> - <i>Journal de la Faculté des Sciences et Techniques.</i> - <i>Revue Africaine de Communication</i> - <i>Dakar Médical</i> - <i>Psychopathologie africaine</i> - <i>Annales de la Faculté des Lettres et Sciences Humaines</i> - <i>Initiations et Etudes Africaines</i> - <i>Notes Africaines</i> - <i>Nouvelles Annales Africaines</i> - <i>Bulletin de l'IFAN-Ch. A. DIOP</i> o <i>Série A. Sciences de la Vie, Sciences de la Terre</i> o <i>Série B. Sciences Humaines</i>
Gaston Berger University (UGB)	- <i>URED, scientific journal of GBU</i> - <i>Langues et Littératures, published by GELL</i> - <i>Safara: Revue internationale de langues, littératures et cultures</i> - <i>Revue Sénégalaise de sociologie, published by URIC</i> - <i>Revue de géographie de Saint-Louis</i> - <i>Revue Afrika statiska</i>
University of Ghana	- <i>Legon Journal of Sociology</i> - <i>Research Review</i> - <i>The Legon Journal of the Humanities</i> - <i>Ghana Social Science Journal</i> - <i>Management and Organisation Journal</i>
University of Ouagadougou (UO)	- <i>Annales de l'Université de Ouagadougou</i> - <i>Les Cahiers du CERLESHS</i> - <i>Revue CEDRES-ETUDES</i> - <i>Burkina MEDICAP</i> - <i>Cahier Philosophique d'Afrique</i>